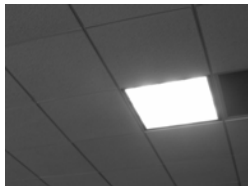


COMMERCIAL DOWNLIGHTS ARE EXPENSIVE TO INSTALL

Most new recessed downlights in the commercial sector use compact fluorescent lamps (CFLs), but a large stock of incandescent downlights remains in operation. Replacing these incandescents with CFLs would cut energy use by about 75 percent, but the CFL fixtures are often too expensive to justify the investment.

In addition, most “small” fluorescent fixtures in hallways, lobbies, and conference rooms use full-size T-8 or T-12 lamps in a relatively large (2-foot square) fixture. Such fluorescent fixtures with full-size lamps are often considered less aesthetically pleasing compared to recessed downlights, which produce less glare and have a cleaner look. However, CFL downlights are relatively expensive to install because more fixtures are required to maintain illumination levels.



Typical “small” fixture using full-size fluorescent lamps

Researchers from the California Lighting Technology Center (CLTC) developed two prototype CFL downlight systems—one each for commercial and residential markets—that reduce both energy and installation costs while improving lighting quality.

MASTER-REMOTE CFL DOWNLIGHTS

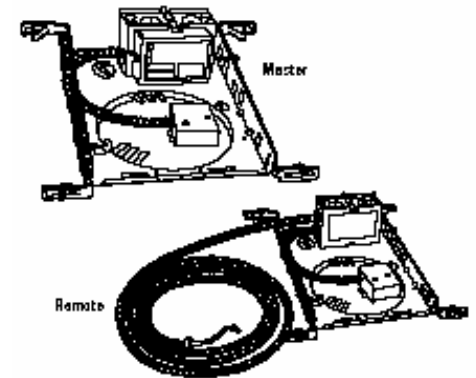
BUILDING ON A PREVIOUS PIER PROJECT THAT DEVELOPED A FAMILY OF CFL DOWNLIGHTS FOR RESIDENTIAL NEW CONSTRUCTION—LITHONIA MODEL CKP62—CLTC RESEARCHERS WORKED WITH LITHONIA LIGHTING TO DEVELOP A NEW FAMILY OF DOWNLIGHTS FOR COMMERCIAL NEW CONSTRUCTION AND RENOVATION PROJECTS. THE NEW SERIES, COMPRISING MODELS CCR62 AND CCR82, EMPLOYS JUST ONE BALLAST TO OPERATE TWO LAMPS USING A PLUG-AND-PLAY WIRING SYSTEM. THIS SYSTEM CUTS EQUIPMENT AND INSTALLATION COSTS WHILE REDUCING ENERGY USE. THE RESEARCH TEAM ALSO DEVELOPED A PROTOTYPE RESIDENTIAL RETROFIT KIT THAT PROMISES TO ALLOW COST-EFFECTIVE REPLACEMENT OF INCANDESCENTS.



The master-remote CFL downlighting system uses only one ballast to operate two lamps.

ONE BALLAST OPERATES TWO LAMPS

CFL downlights have a clean look desired by many building owners and lighting designers. The new Lithonia CCR series lets building owners and lighting designers more easily install CFL downlights at a lower cost than for standard CFL downlighting systems.



Lithonia model CCR62 uses a plug-and-play wiring system to cut installation costs.

Benefits

- Cuts energy use compared to standard systems:
 - 6 percent versus standard CFL downlights
 - 15 percent versus T-12 fluorescent
 - 75 percent versus incandescent downlights
- Plug-and-play installation cuts labor cost by about 20 percent.
- Single ballast operates two lamps, reducing equipment cost.
- Thermally-enhanced ballast configuration ensures long lamp life.

INTERESTED?

Office building owners, lighting designers and specifiers, lighting equipment manufacturers, code developers, contractors, and utility staff can use the information on the CFL downlight system.

Key next steps include:

- **Building owners**—Consider replacing incandescent downlights and T-12 fluorescents with CFL downlights.
- **Utility staff**—Work with CLTC to identify and support field demonstrations.
- **Luminaire manufacturers**—Consider manufacturing plug-and-play downlight systems and commercializing the residential retrofit prototype.
- **Code Developers**—Consider the impact of CFL downlights in residential applications.
- **Lighting Designers**—Consider CFL downlights in applications where full-size fluorescent lamps are typically used but a cleaner look is desired.

This project was part of the PIER Lighting Research Program. To participate in field demonstrations or to get more information on this technology, contact Erik Page at CLTC (epage@ucdavis.edu).

Additional information about this technology can be found on the following websites:

- PIER project site:
www.energy.ca.gov/pier/buildings/projects/500-01-041-0-4-4_3.html
- PIER contractor site:
www.archenergy.com/lrp/products/downlight.htm
- PIER researcher site:
www.cltc.ucdavis.edu (under projects)



Funded by the
California Energy Commission
Public Interest Energy Research Program

Contact Information

California Energy Commission
www.energy.ca.gov/pier
Michael Seaman
mseaman@energy.state.ca.us

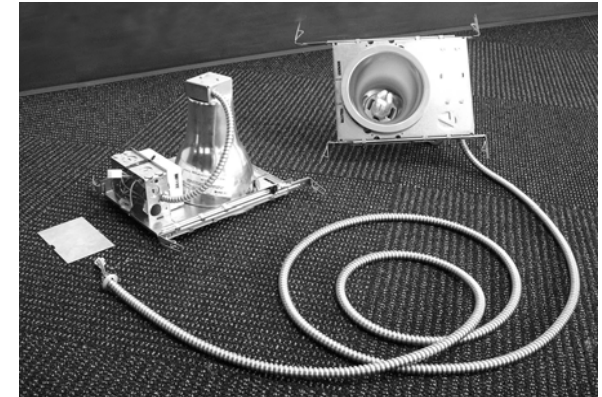
Architectural Energy Corporation
www.archenergy.com/lrp
Judie Porter
jporter@archenergy.com

California Lighting Technology Center
www.cltc.ucdavis.edu/
Erik Page
epage@ucdavis.edu



Arnold Schwarzenegger, *Governor*
California Energy Commission
Chair: Jackalyne Pfannenstiel
Vice Chair: James D. Boyd
Commissioners: Arthur H. Rosenfeld, Jeffery Byron,
John L. Geesman

CFL RECESSED DOWNLIGHTS FOR COMMERCIAL BUILDINGS



EASY INSTALLATION CUTS COST



Public Interest
Energy Research